



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

Inter Patent Application of

STACEY et al.

Atty. Ref.: SCS-540-571

Serial No. 10/539,286

TC/A.U.: 1791

Filed: June 16, 2005

Examiner: Galen H. Hauth

For: AN APPARATUS FOR CURING A COMPOSITE LAMINATE

\* \* \* \* \*

November 24, 2009

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
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Sir:

**REPLY BRIEF**

This Reply Brief is responsive to the Examiner's Answer mailed September 24, 2009 in the above appeal. The grounds of rejection listed between pages 3 and 12 are essentially a verbatim copy of the grounds of rejection set out in the Final Rejection and therefore Appellants' previously filed Appeal Brief properly responds to each of these purported grounds of rejection.

However, beginning on page 12 and continuing to page 16 of the Examiner's Answer, the Examiner raises various new points of argument in response to the sections in Appellants' Appeal Brief and Appellants will utilize the Appeal Brief headings in response thereto.

**A. The Examiner fails to provide any rationale for the rejection of claim 17 under 35 USC §102**

The Examiner's withdrawal of the rejection of claim 17 under 35 USC §102 is very much appreciated.

**B. The Examiner errs in not giving the method step of dependent claim 21 "patentable weight"**

As noted in the Appeal Brief, the Examiner indicates that in claim 21, the additional limitation to the steps of claim 13 is not given patentable weight. The step recited in claim 21 (which is dependent on claim 13) is "the step of monitoring the temperature of the material to determine the location and existence of voids during curing." The Examiner in his Answer explains that he is parsing this recited step into two portions: first, "the step of monitoring the temperature of the material" and, secondly, as an intended use of that step, i.e., "to determine the location and existence of voids during curing." The Examiner is not entitled to be his own lexicographer as this is a right reserved for the Appellant. The improper parsing the recited method step into constituent parts, i.e., a generic temperature "monitoring" and a purported use of the temperature monitoring, is not permitted anywhere in the MPEP, the Code of Federal Regulations or in the patent statutes. The Examiner is again requested to provide any authority for his parsing of the claimed step.

If the language "to determine the location and existence of voids during curing" was somehow included in the claim preamble (it is not in claim 21) **and** was not needed to define the combination of the subsequently recited steps, then the Examiner **might** have an

argument that the limitation is a reflection of “intended use” (See the MPEP §2111.02 regarding “Effect of the Preamble”).

However, Appellants’ claim 21 recites “a method for curing composite material” in the preamble and this incorporates the recited method steps of independent claim 13, i.e., “placing,” “curing,” “monitoring the temperature” and “adjusting.” These method steps must be further limited by dependent claim 21, i.e., including “the step of monitoring the temperature of the material to determine the location and existence of voids during curing.”

If the Examiner’s rationale with respect to parsing a method step limitation in a claim was correct, then his reading of claim 21, i.e., the step of “monitoring the temperature,” is identical to the previously recited step in independent claim 13, i.e., “during said curing step, monitoring the temperature . . . .” Thus, claim 21, given the Examiner’s construction, would not further limit claim 13. Since the Examiner has made no objection or rejection of claim 21 as failing to limit the claim from which it depends (and thereby violating 35 USC §112 (4<sup>th</sup>), this is believed to be an admission on the Examiner’s part that indeed claim 21 does further limit claim 13.

Finally, the simple meaning of the phrase “monitoring the temperature of the material to determine the location and existence of voids during curing” clearly conveys a method step limitation to those of ordinary skill in the art. The monitoring of the temperature must be to an extent and with sufficient accuracy to “determine the location and existence of voids during curing.” This extent and accuracy will clearly be understood as limiting the “monitoring the temperature of the material” as contended by the Examiner.

Thus, claim 21 further limits the subject matter of claim 13 and the Examiner's ignoring of these further limitations is clearly erroneous and should be reversed by the Board.

**C. The Examiner misapprehends the teachings set out in the prior art references**

1. Independent claims 8 and 13 require "adjusting the temperature of the vessel to maintain a constant curing temperature"

In the Appeal Brief (page it was pointed out that the Charbonnet reference said nothing about the claim limitation of providing an oven having a "constant curing temperature" for a composite material. However, the Examiner's Answer only points to the Charbonnet reference as teaching that "oven temperature can be adjusted accordingly" with no reference to the composite material's "curing temperature" being maintained constant.

Even if one assumes that both the presently claimed invention and the Charbonnet reference have adjustable temperature ovens, this doesn't mean that there is any constant curing temperature involved in the Charbonnet composite material. However, Appellants' claims require adjusting the temperature of the vessel to maintain a constant curing temperature of the composite material (while not specified, since the composite material is the only material which is being cured, the claim must refer to the composite material).

Because the Examiner can point to no portion of the Charbonnet reference which has any suggestion of maintaining a constant curing temperature in the composite material, there is no support for the Examiner's position.

Moreover, it is clear that a constant curing temperature of the composite material cannot possibly exist in the Charbonnet reference because the Charbonnet oven is open at both ends, i.e., the composite material heats up as it enters the Charbonnet oven and cools down as it moves out of the oven and the IR lamps in Charbonnet adjust the temperature of the composite material between the entrance and exit. The claimed invention heats up the closed autoclave oven to bring the composite material to the desired curing temperature and then maintains that curing temperature in the composite material during curing.

Given that the Examiner fails to answer the question as to where Charbonnet teaches maintaining "a constant curing temperature" of the material being cured as required by the claims, the Examiner essentially admits that this claim limitation is not present in the Charbonnet reference. As a result, Charbonnet cannot possibly anticipate the subject matter of Appellants' independent claims.

## 2. The Examiner ignores the method step limitations of claim 21

The Examiner essentially copies verbatim his response to Appeal Brief section B and therefore Appellants incorporate by reference the above response in this Reply Brief Section B (to the Examiner's Answer Section B).

**D. The Examiner fails to substantiate his rejection of claims 8, 13, 17 and 21 under 35 USC §102**

In the Appeal Brief, Appellants have pointed out that with respect to claims 8, 13 and 21, Charbonnet contains no teaching of taking and processing temperature readings in order “to maintain a constant curing temperature.” Appellants have pointed out that the Charbonnet oven has two open ends and the temperature of the composite material being cured at the location of the ends of the oven would be much lower than the temperature of the composite material would be at the middle of the oven, contrary to the Examiner’s allegation.

It is further noted that Charbonnet utilizes infrared heaters to heat up the curing composite material so as to maintain the gelation point of the composite material at a particular spot during the passage of a curing composite panel through the oven. In effect, Charbonnet adjusts the output of the infrared heaters to heat up the composite material so as to adjust the gelation point of the composite material as it passes through the oven. There is no disclosure of any maintenance of a “constant curing temperature” of the composite material anywhere in the Charbonnet reference.

Finally, it is noted that the Examiner makes an admission against interest by stating “Charbonnet teaches changing the oven temperature to maintain a first curing stage at a desired point in the oven which is caused by having a specific temperature at a desired point in the oven as discussed above.” This statement by the Examiner is a clear admission that Charbonnet does not adjust the oven temperature “to maintain a constant curing temperature” but rather adjusts the infrared heaters to make sure that gelation of

the composite material occurs at a specific point. In fact, a simple reading of the Charbonnet reference will teach that panels on the assembly line pass through the open-ended oven are brought up to a temperature and then the temperature of the panels themselves is modified, i.e., increased or decreased by the use of the infrared heaters, to ensure that the gelation point of the composite material occurs at a specific position in the oven as the panel travels therethrough.

Again, the only similarity that this bears with Appellants' claimed invention is that it relates to the curing of composite material. However, absent that fleeting similarity, there is no disclosure of Appellants' claimed "constant curing temperature" of the composite material and in fact Charbonnet, as admitted by the Examiner, changes the IR radiation so as to change the temperature of the composite material so that the gelation point is at a desired position during the panel's travel through the oven.

Because Charbonnet actually teaches away from the claimed invention, it cannot render obvious or anticipate the subject matter of the independent claims or claims dependent thereon.

**E. The Examiner fails to set out a *prima facie* case of obviousness with respect to claims 14 and 17 over the Charbonnet/Whipple combination**

In his response to the suggestion in the Appeal Brief that the Examiner has failed to set out a *prima facie* case of obviousness with respect to the Charbonnet/Whipple combination, the Examiner does not deny the admissions set out in Appellants' Appeal Brief, i.e., that in the Final Rejection the Examiner admits "Charbonnet does not teach

that the infrared device is located outside the vessel” or that “Charbonnet does not teach that the temperature across the whole of the material is measured.” (Appeal Brief, page 11, second full paragraph). The Examiner again appears to take the position that somehow and somewhere the Charbonnet reference teaches the step or apparatus for maintaining “a constant curing temperature” which, as discussed above, is specifically taught away from by the Charbonnet reference.

The Examiner’s clarification in the first paragraph on page 14 of the Answer that he relies upon the Whipple reference only for providing a “non-contact measurement device using infrared radiation” is very much appreciated. This “infrared radiation” is given off by the food being cooked by Whipples microwave radiation. However, there is no suggestion in the Whipple reference that there is any “constant curing temperature.” In fact, it is well known that when microwaving food, the temperature of the food is constantly increasing during irradiation. As a result, it is clear that Whipple teaches monitoring the increasing temperature of the food (not a constant curing temperature of a composite material) so as to turn off the microwaves when it reaches the appropriate cooking temperature.

Thus, there is no measurement or adjustment of the temperature of the vessel in order to maintain a constant curing temperature for a composite material and thus Whipple would clearly teach away from the claimed invention. As a result, all of the steps recited in Appellant’s claims are not disclosed in the cited prior art and the first prong of a *prima facie* case of obviousness has not been made out by the Examiner.



Turning to the second burden on the Examiner (in order to set forth a *prima facie* case of obviousness), it is noted that the Examiner does not respond to the Appeal Brief's issue raised in the first paragraph on page 12, i.e., that the Examiner has failed to provide any explicit "analysis" as to why one of ordinary skill in the art would pick and choose elements from the Charbonnet and Whipple references and then combine them in the manner of Appellants' claims.

Appellants have properly raised this issue and cited the Supreme Court requirements in the *KSR* case in the Appeal Brief on pages 6 and 7 and this discussion need not be repeated again. Suffice it to say that the burden is clearly on the Examiner to meet this second prong of a *prima facie* case of obviousness.

Appellants have made the case that the Examiner has not met his burden of proving this aspect of a *prima facie* case and therefore the case fails. The Examiner has apparently chosen not to respond with respect to claims 14 and 17.

**F. The Examiner fails to set out a *prima facie* case of obviousness with respect to claims 16, 18 and 19 over the Charbonnet/Schenck combination**

The Appeal Brief makes the point that the cited prior art only teaches components which could be combined, but that there is no reason or motivation set out by the Examiner for their combination. Again, this second prong of a *prima facie* case of obviousness is clearly defined by the Supreme Court's decision in the *KSR* case cited and discussed in Appellants' Brief. The Examiner does not dispute or disagree with the Supreme Court decision and merely ignores it.

While the Examiner's response to Appellants' "Gettysburg Address" analogy is cute ("as this was a search field not considered in the present invention"), he avoids the issue raised – every word in the English language and every element and method step recited in Appellants' claims is known in the prior art and - given the Examiner's interpretation, all inventions must by definition be obvious. This is clearly incorrect as, while the individual components or method steps might be known, it is the combination of those elements to accomplish a new and unique benefit which is not known to those of ordinary skill in the art and is accordingly patentable.

It is noted that the Examiner provides no analysis of his reasons or rationale for picking and choosing elements and method steps from the cited prior art references and then combining them in the manner of Appellants' claims while at the same time disregarding the specific teachings of those prior art references.

Regarding claim 19, there is recited the further feature that points on the component are selected for taking readings as well as the camera being suitably directed thereto. Neither Charbonnet nor Schenck provide any indication of a benefit to be had from selecting points on the component for taking readings and then directing the camera to such points. While Charbonnet doesn't even disclose a camera, there is no disclosure in Schenck either of these features of the claim. The Examiner does not identify where or how the features of claim 19 are disclosed anywhere in the cited combination let alone the rationale for combining them in the manner of the claim.

As a result, the Examiner does not respond to the allegation that he has failed to meet the second prong of establishing a *prima facie* case of obviousness or that the prior

art teaches away from the claimed combination. Accordingly, the continued rejection of claims 16, 18 and 19 is respectfully traversed.

**G. The Examiner fails to set out a *prima facie* case of obviousness with respect to claims 8, 13, 14, 15, 17, 20 and 21 over Handel in view of Whipple**

The Examiner does not deny the admission quoted in the Appeal Brief, i.e., that “Handel does not teach that the control system comprises an infrared device remote from the material.” As noted above, Whipple’s monitoring of food being cooked in a microwave oven, while it does relate to non-contact measurement of temperature within a vessel, it has nothing to do with the curing of composite material.

The Handel and Whipple references are in totally different fields as noted in the Appeal Brief (Handel heats the material by heating the air inside of an autoclave and Whipple heats the material directly by microwaves). The Handel vessel is a temperature controlled vessel whereas the Whipple vessel is a microwave oven which uses cooling air to cool the vessel while constantly heating the food being cooked.

Rather than providing any reason for combining elements of the Whipple and Handel references, the Examiner merely provides the conclusory statement that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of Whipple to monitor the material in Handel.” As noted by the Supreme Court, “rejections on obviousness grounds cannot be sustained by mere conclusory statements” and the burden is on the Examiner to provide some “rationale underpinning to support the legal conclusion of obviousness.” *KSR*, quoting *In re Kahn*. The

Examiner does not further supplement his Final Rejection so as to meet his burden of proof in establishing a *prima facie* case of obviousness with respect to claims 8, 13-15, 17, 20 and 21 and reversal of this clearly erroneous rejection is respectfully requested.

**H. The Examiner fails to set out a *prima facie* case of obviousness with respect to claims 16 and 18 over Handel in view of Whipple and further in view of Schenck**

The Examiner's rejection of claims 16 and 18 over Handel in view of Whipple in view of Schenck relies upon the Handel/Whipple combination as discussed in conjunction with claim 13 in section G. The Examiner does not appear to add anything in the paragraph bridging pages 15 and 16 of the Answer which would supplement the deficient rejection in the Final Rejection.

To summarize, there is no required "analysis" as to why one would pick and choose method steps from the dissimilar Handel and Whipple references and then combine them in the manner of claims 16 and 18. However, as noted in the Appeal Brief, even if the elements from the three separate references were combined as suggested by the Examiner, they would not disclose the method steps of claims 16 and 18. Because the burden is on the Examiner to establish a *prima facie* case of obviousness and because the Examiner fails to meet this burden, there is no evidentiary support for continued rejection over the Handel and Whipple references.

As a result of the above, there is simply no support for the rejections of Appellants' independent claims or claims dependent thereon under 35 USC §102 or §103. Thus, and

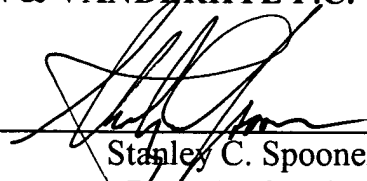
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in view of the above, the rejection of claims 8 and 13-21 under 35 USC §102 and/or 103 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

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